

WHAT IS CLAIMED IS:

1. A process for handling a printing medium (1) in a microwave mechanism (5), of a printing machine, comprising the steps of:
5 removing moisture from the microwave mechanism (5), and conveying the printing medium (1) by supporting the printing medium (1) by flowing air.
2. A process for handling a printing medium (1) in a microwave mechanism (5), of a printing machine, according to Claim 1, wherein
10 air is prevented from flowing out of a slot area (18) that is used to convey the printing medium (1) through the microwave mechanism (5) and into an application area (17) that incorporates the slot area (18).
3. A process according to Claim 2, wherein the air is heated
15 before it flows into the microwave mechanism (5).
4. A process according to Claim 3, wherein the air is heated by energy dissipated by the microwave mechanism (5).
- 20 5. A process according to Claim 1, wherein the moisture content inside the microwave mechanism (5) is determined, preferably in the vicinity of a travel path of the printing medium (1).
6. A process according to Claim 3, wherein the temperature is
25 adjusted automatically, in particular, as a function of the measured level of moisture and the velocity of the air stream.
7. A process according to Claim 6, wherein the velocity of the
30 air flow is automatically adjusted, in particular, as a function of the temperature of the flowing air, the measured moisture, the type of printing medium (1), and the weight of the printing medium (1).

8. An apparatus for handling a printing medium (1), that includes a microwave mechanism (5), for a printing machine, comprising: a mechanism for generating and controlling flowing air for reducing moisture inside the microwave mechanism (5) and supporting conveyance of the printing medium (1).
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9. An apparatus for handling a printing medium (1), that includes a microwave mechanism (5) for a printing machine, including a slot area (18) that is used for conveying the printing medium (1) along a travel path through an application area (17), comprising: sheets (26) that at least partially seal off said slot area (18), and are made of a material that either does not absorb microwaves or does so only to a slight degree, said sheets being preferably located in the vicinity above and below the travel path of the printing medium (1).
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10. An apparatus according to Claim 9, wherein said sheets (26) at least partially seal off an area that extends beyond the application area (17) and that incorporates the application area (17).
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11. An apparatus according to Claim 9, wherein said sheets (26) that at least partially seal off said slot area (18) are perforated for the purpose of guiding the flowing air.
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12. An apparatus according to Claim 9, wherein said material of sheets that do not absorb microwaves is PTFE.
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13. An apparatus according to Claim 9, wherein the apparatus further incorporates air inlet boxes (11 and 12), preferably below and above the application area (17).

14. An apparatus according to Claim 9, wherein walls (15 and 16) of said application area (17) contain air inlet openings (24).
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15. An apparatus according to Claim 14, wherein said air inlet openings (24) have a geometry to prevent or minimize the escape of microwave radiation.

5 16. An apparatus according to Claim 9, further including at least one air barrier (19 and 20) preferably made of PTFE, and said at least one air barrier (19 and 20) separates a slot area (18) inside the application area (17) that is used to pass the printing medium (1) through the application area (17) from the remaining applicator (48).

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17. An apparatus according to Claim 9, further including a dielectric load (29), located in the microwave mechanism (5), said dielectric load containing air passage holes (35) that make the passage of air possible.

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18. An apparatus according to Claim 9, further including a device for measuring moisture (36) that is located in the vicinity of the microwave mechanism (5).

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19. An apparatus according to Claim 18, wherein said device for measuring moisture (36) contains at least two electrodes (31 and 32) located on a nonconductive surface, preferably on one of the sheets (26).

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20. An apparatus according to Claim 9, further including, at least one preheating mechanism for preheating incoming air.

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21. Microwave fuser mechanism (5), for handling printing media (1) moving along a travel path in a printing machine, comprising:
a ventilation mechanism along with air channels that are integrated into at least one microwave application area (17) and that contain air exit openings for blowing air into a travel path for printing media (1) that runs through the microwave mechanism (5).

22. Microwave mechanism (5) according to Claim 21, wherein the travel path is enveloped by PTFE sheets (26), which cover at least a preponderance of the travel path.

5 23. Microwave mechanism (5) according to Claim 22, wherein said PTFE sheets (26) are perforated.

24. Microwave mechanism (5) according to Claim 21, wherein the application area (17) has walls (15 and 16) that have air inlet openings (24).
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25. Microwave mechanism (5) according to Claim 21, further including a device for measuring moisture (36) that is located in the vicinity of the travel path.

15 26. Microwave mechanism (5) according to Claim 21, further including a preheating mechanism for preheating air streams.